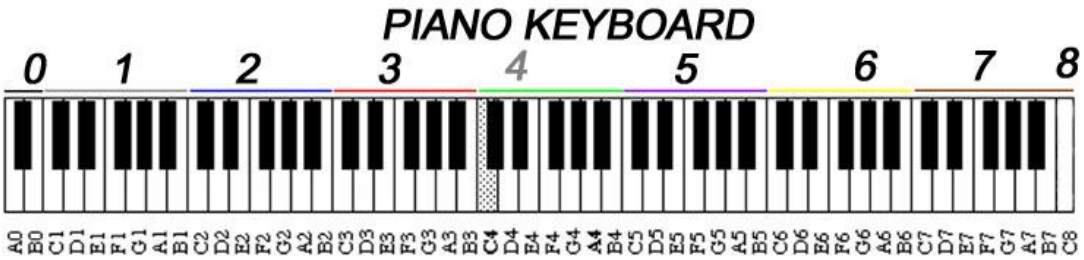
6. Gleb

Program Name: Gleb.java **Input File: gleb.dat**

Having studied piano for several years, Gleb knows that the white keys on the standard 88-key piano are arranged in diatonic scales from C to B (C,D,E,F,G,A,B), each group of seven letters numbered from 0 to 8, starting with group zero with only two notes, A0 as the very lowest key, then B0, followed by group one with C1 through B1, group two, C2 to B2, C3 to B3, all the way to C8 as the highest key. A "C" scale starting at C3 would be C3, D3, E3, F3, G3, A3, B3, and C4 (which is middle C on the piano).



For data in a programming project he is planning, he decides to represent a melody with the starting note, followed by several positive or negative integers representing the intervals that follow that note, like 2 for the interval of "up a second", 3 for "up a third", -4 for "down a fourth", etc. The interval of "up a second" simply goes from one note to the next, like C to D, D to E, or A to B. "Up a third" would skip a letter, like going from C to E, or F to A. The rest of the interval jumps progress in the same way. *(There are further interval designations like "major", "minor", "perfect", "augmented" and "diminished", but for now we'll just stick to the basic white key intervals. Also, rhythms will not be included at this point in the project.)*

Gleb's goal is to create an alphanumeric text stream that could be interpreted by a melody function that would sound the actual notes. For example, the data for the melody, "The Eyes of Texas", would begin like this, with the actual notes produced shown below the words:

```
C4  4    -4 4   -4 4   2  2  -3
The eyes of Tex-as are up-on you
C4  F4   C4 F4  C4 F4  G4 A4 F4
```

C4 is the starting note, followed by 4 which indicates an interval of "up a fourth" to F4, -4 going back down to C4, and so on. The output for the above input would be:

```
C4 F4 C4 F4 C4 F4 G4 A4 F4
```

Input: Several lines of data, each line containing a beginning "note" (letter, integer), followed by several positive or negative integers, no more than 25 notes in the entire melody.

Output: A stream of letter/number combinations representing the actual melody represented by the data. All letters must be uppercase, and at least one space must separate each "note".

Sample input:

```
C4 4 -4 4 -4 4 2 2 -3  (Melody for "The Eyes of Texas")
F5 4 2 -5 4 2 2 -3 2 2 -3 2  (Melody for "Maria", West Side Story)
C6 1 1 -4 2 1 -2 6 1 -2 1 -2  (Melody for "Old MacDonald Had A Farm")
```

Sample output:

```
C4 F4 C4 F4 C4 F4 G4 A4 F4
F5 B5 C6 F5 B5 C6 D6 B5 C6 D6 B5 C6
C6 C6 C6 G5 A5 A5 G5 E6 E6 D6 D6 C6
```